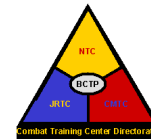




# CTC Transformation

***Briefing to  
OPFOR 2001 Conference  
06 FEB 01***

**Combat Training Center Directorate  
(CTCD)**



# Army Transformation and the Changing Environment

## OE Past

Echeloned  
Threat

Linear-Sequential  
Operations

Situational  
Awareness

Optimized for  
Defense

Fight WARSAW Pact

Analog

## OE Future

Adaptive/Learning  
Threat

Noncontiguous  
Simultaneous Ops

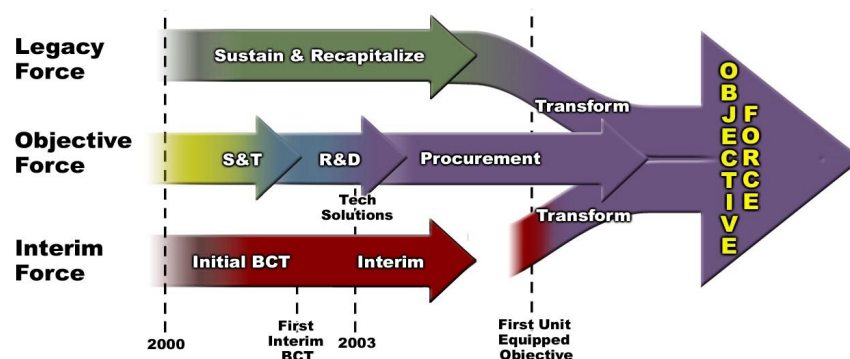
Situational  
Understanding

Optimized for  
Offense

Full-Spectrum

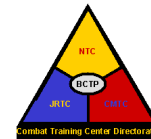
Digital

## *The Army Transformation*



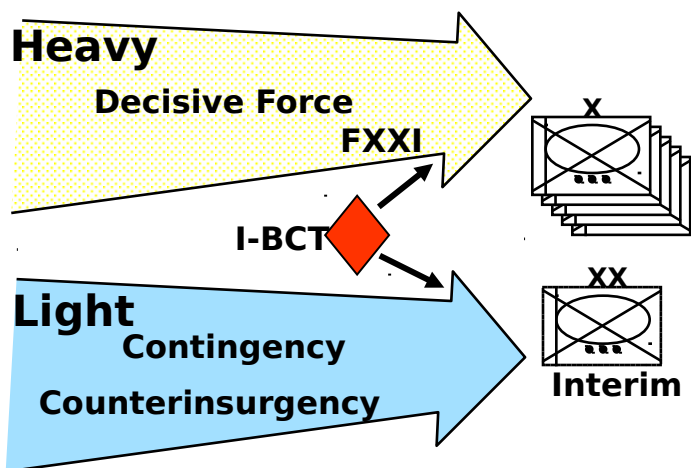
*... Responsive, Deployable, Agile, Versatile,  
Lethal, Survivable, Sustainable.*

**What's the impact on the CTC  
program?**



# Impact on the CTCs

**As the Army Transforms...**



## Legacy

1. Deter
2. Buildup
3. Shape
4. Decisive

## Interim

1. Deter
2. Shape
3. Decisive...sooner

## Objective

1. Deter
2. Shape
3. Decisive

**Legacy, Hybrid, Force XXI, Transformation**  
**CTCs must change to remain relevant**

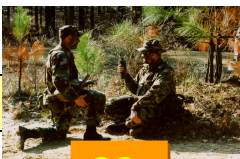
Units

OPS GRP

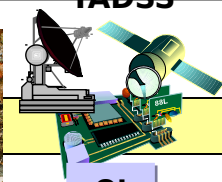
TADSS

OPFOR

Facilities



OCs



OI  
S



OSVs



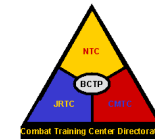
MOUT  
SITES

CTCs

**Leader Development**  
**Operational Experience**



# CTC Transformation



*The operational environment is more than just adjusting the OPFOR, it involves everything required to make a CTC rotation an operational experience in a learning environment.*

## Factors influencing the CTC Transformation

- Replicate new OE
- Joint/Combined Operations
- ODSS
- Legacy, Hybrid, Force XXI, Transformation
- Extended Battlespace
- Increased requirements for OCs, Instrumentation, TADSS and Facilities



# Elements of a Viable CTC Resourcing Strategy



## UNITS

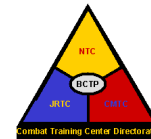
- Unit training program and realistic training
- OCs for mentorship and feedback . . . control and safety
- TADSS for training realism
- OPFOR for a rigorous fight
- Instrumentation to facilitate feedback
- Facilities to support the training audience/permanent party

## OPS GROU P

## FACILITIES

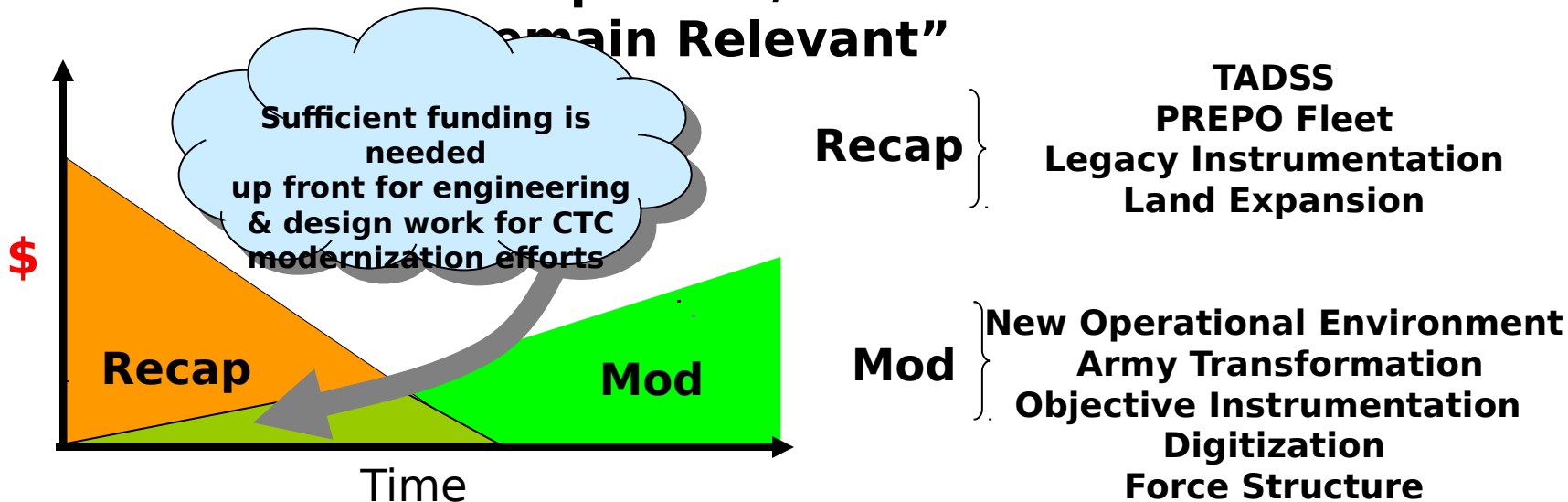
## OPFOR

## TADSS



# Recapitalization & Modernization

“Must Recapitalize/Modernize to remain Relevant”

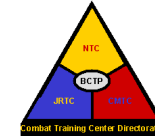


**Recapitalization: Sustain Training Excellence**

**Legacy** —————→ **Interim**

**Modernization: Sustain Training Effectiveness**

**Interim** —————→ **Objective**



# The Investment Challenge

**Q: What is the threshold investment to provide the right operational experience and training environment?**

**A: Must be effective yet affordable.**

**Optimal**

**OPFOR  
TADSS  
Instrumentation  
Infrastructure**

**Good  
Enough**

**Tactical Realism  
Feedback/Control  
Training Support**



## Perfect Situational Awareness

- 100 % knowledge
- Fully manned OPFOR with tier one technology
- No replications

## Needed in Quality and Quantity

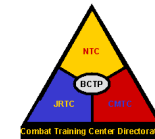
- Sufficient for safety/AARs
- Replicate larger units with fewer multifunctional soldiers/vehicles

using tier two technology

- Leverage simulations, technology,



# Operational Environment



## Defining Characteristics

- Complex terrain and urban environments
- Humanitarian issues
- International interest/regional involvement
- Advanced technology
- Discrete high-tech systems/hybridization
- NGOs/PVOs criminal organizations
- National Will- Not a threat COG

**Environment**

**Capabilities**

- Advanced digital C2
- Modern/mobile/capable reserves
- Long range artillery, rockets, TBMs, precision munitions
- Counter-air/missile
- Night vision capability
- WMD/E
- Adaptive operating patterns (asymmetric)

## Military Strategy

Preserve military capability and prolong the conflict while attacking intangible factors through conventional and asymmetric methods and means.

## Operational Design

- Precision Fires
- Entry Denial Operations
- Neutralize Technological Overmatch
- Control Tempo and Conflict Environment
- Decentralized and Dispersed Operations
- Allow No Sanctuary

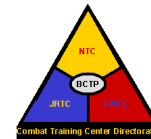
## Tactical Methods

Transition Operations  
Sanctuary Operations  
Dispersed Attack  
Sophisticated Ambush





# Operational Environment



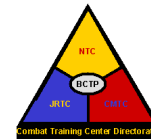
## Critical Variable

## Defining Characteristics

Physical Environment	Complex terrain & urban environments
Nature of the State	Failed state/autocratic rule/fractured public institutions
Sociological Demographics	Internal society fractured
Regional/Global Relationships	International interest - Regional involvement
Military Capabilities	Industrial age forces - adapting
Technology	Discrete high-tech systems/ hybridization
Information	Media/info attack/IO
External Organizations	NGOs/PVOs/criminal/supra-national
National Will	USCOG/ NOT a threat center of gravity
Time	Favors the threat
Economics	Sustained operations

### ***Gives way to:***

- ***High likelihood of close combat in urban environments and complex terrain***
- ***Humanitarian issues present across the full spectrum of conflict***
- ***Governmental, private, international, criminal and non-governmental organizations increased presence and influence***
- ***Ubiquitous presence of media***
- ***Increased global and regional interest in local matters (alliances and coalitions)***
- ***Advanced technology present or available . . .***
- ***and a changing military dynamic***



# Threat

## Low End Capabilities

**Key Systems:** ADA - particularly MANPADs, light infantry, mortars, artillery, ATGM, RPG, limited mechanized and armor forces, internal and external info operations, special police, para-military groups, and special operations forces, cellular telephones, mines, the internet.

### Types of Forces

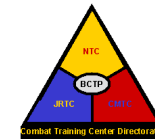
		Dispersed mobile formations (redundant comms)
		Precision fires (GPS/ISR)
		Guerilla/irregular/para-military (urban) (HUMINT)
		ISR / UAV (access to space)
		Sophisticated ambush
		Aviation
		WMD
		Mines
		Special police / para-military

### High End

**Key Systems:** Excellent advanced C2, large modern military forces, sophisticated air defense w/ IADS, WMD, missiles, special police, para-military groups, and special operations forces, cellular telephones, SATCOM, the internet.

## High Pay-off Investment

- **Digital C2**
- **Modern/mobile/capable reserves**
- **Long range artillery, rockets, TBMs, precision munitions**
- **Counter-Air/Missile**
- **Night vision capability**
- **WMD/E**
- **Adaptive operating patterns (asymmetric)**
- **Off-the-shelf technology**



# Threat Tactics

**Adaptive Formations** **Force Oriented**

**Terrorism**

**IO**

**Deception**

**Precision Fires**

**Sophisticated Ambushes**

**Create Sanctuary in Urban Environments**

**Established Operations**

**Employ Civilians**

**Dispersed Forces**

**Attack APODs/SPODS**

**Night Operations**

## How it will Fight

Threat forces will . . . move quickly from their established ends, ways and means.

. . . employ a defensive strategy, preserving military capability while inflicting as much damage as possible  
. . . portray the established while executing adaptively

. . . conduct continuous, simultaneous operations throughout the battlespace

. . . advantage opportunities

. . . neutralize US advantages . . . level playing field.

**SSC Operating Patterns:** Decentralized operations, use of complex terrain and urban environments for sanctuary, ADA ambushes, extensive CCD, movement timed to ISR patterns, night operations, use of civilian population, manipulating the coalition.

**MRC Operating Patterns:** Integrated combined/joint operations, use of complex terrain and urban environments for sanctuary, extensive CCD, movement timed to ISR patterns, night operations, use of civilian population, manipulating the coalition, extensive IO, adequate power projection, asymmetric means.

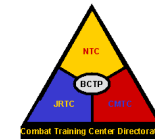
**Objective**  
**Opportunity**  
**Method**  
**End State**

**The Pattern**

- **Transition Operations**
- **Sanctuary Operations**
- **Dispersed Attack**
- **Sophisticated Ambush**



# Summing up the Change



## Environment

### Defining Characteristics

- Complex terrain and urban environments
- Humanitarian issues
- International interest/regional involvement
- Advanced technology
- Discrete high-tech systems/hybridization
- NGOs/PVOs criminal organizations
- National Will- Not a threat COG

## Capabilities

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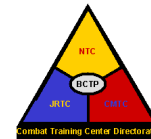
- Precision Fires
- Entry Denial Operations
- Neutralize Technological Overmatch
- Control Tempo and Conflict Environment
- Decentralized and Dispersed Operations
- Allow No Sanctuary

## Tactical Methods

Transition Operations  
Sanctuary Operations  
Dispersed Attack  
Sophisticated Ambush



# Optimizing the Environment



*“Variables have different degrees of impact within the spectrum of conflict”*

**MTW**

Larger

Constant

Smaller

***Transition Operations***

**MRC**

***Sanctuary Operations***

**SSC**

***Dispersed Attack***

***Sophisticated Ambush***

**SASO**

***OPFOR Environment***

**Mechanized Reserves  
Camouflage,  
Concealment  
& Deception  
Dispersed &  
Decentralized Ops  
Precision Munitions  
Counter-Precision  
Long Range Artillery**

**Complex  
Terrain  
Terrorists  
Urban  
Insurgents  
Coalition/Allian  
ces  
C3 Enhance  
FLIR**

**Civil  
Populace  
Media  
NGOs/PVOs  
Criminals  
Special  
Police**



# Range of Army Operations

Military Operations

General U.S. Goal

Offense

Defense

Stability

Support

**War**

**Fight and Win War**

**MTW**

**CTCs**

**Deter War and Resolve Conflict**

**SSC**

**Military Operations Other Than War**

**Promote Peace**

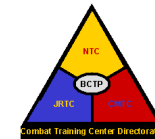
**PME**

**B  
A  
S  
E  
D  
  
o  
n  
  
N  
E  
E  
D**

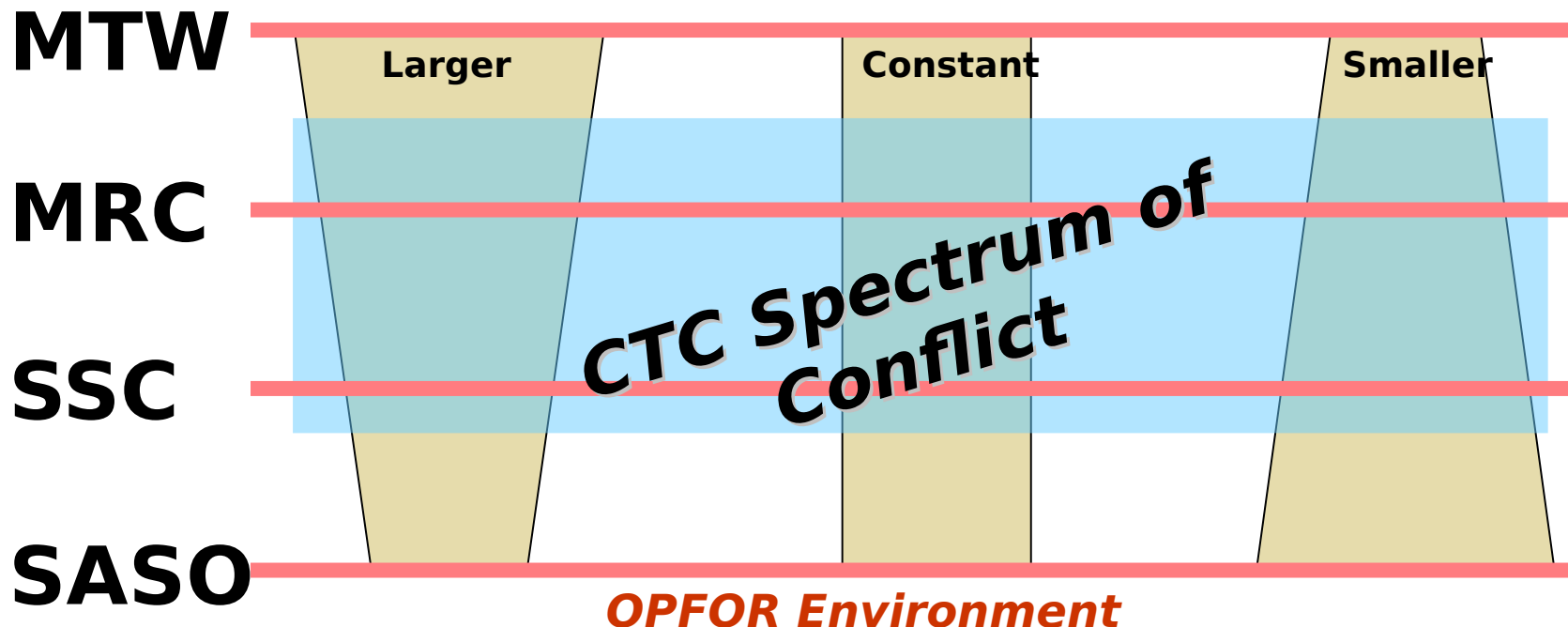
MTW- Major Theater of War  
SSC- Smaller Scale Contingency  
PME- Peacetime Military Engagement



# Application to the CTC Environment



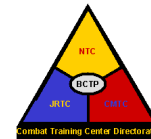
*“Variables have different degrees of impact within the spectrum of conflict”*



**Mechanized Reserves**  
**Camouflage,**  
**Concealment**  
**& Deception**  
**Dispersed &**  
**Decentralized Ops**  
**Precision Munitions**  
**Counter-Precision**  
**Long Range Artillery**

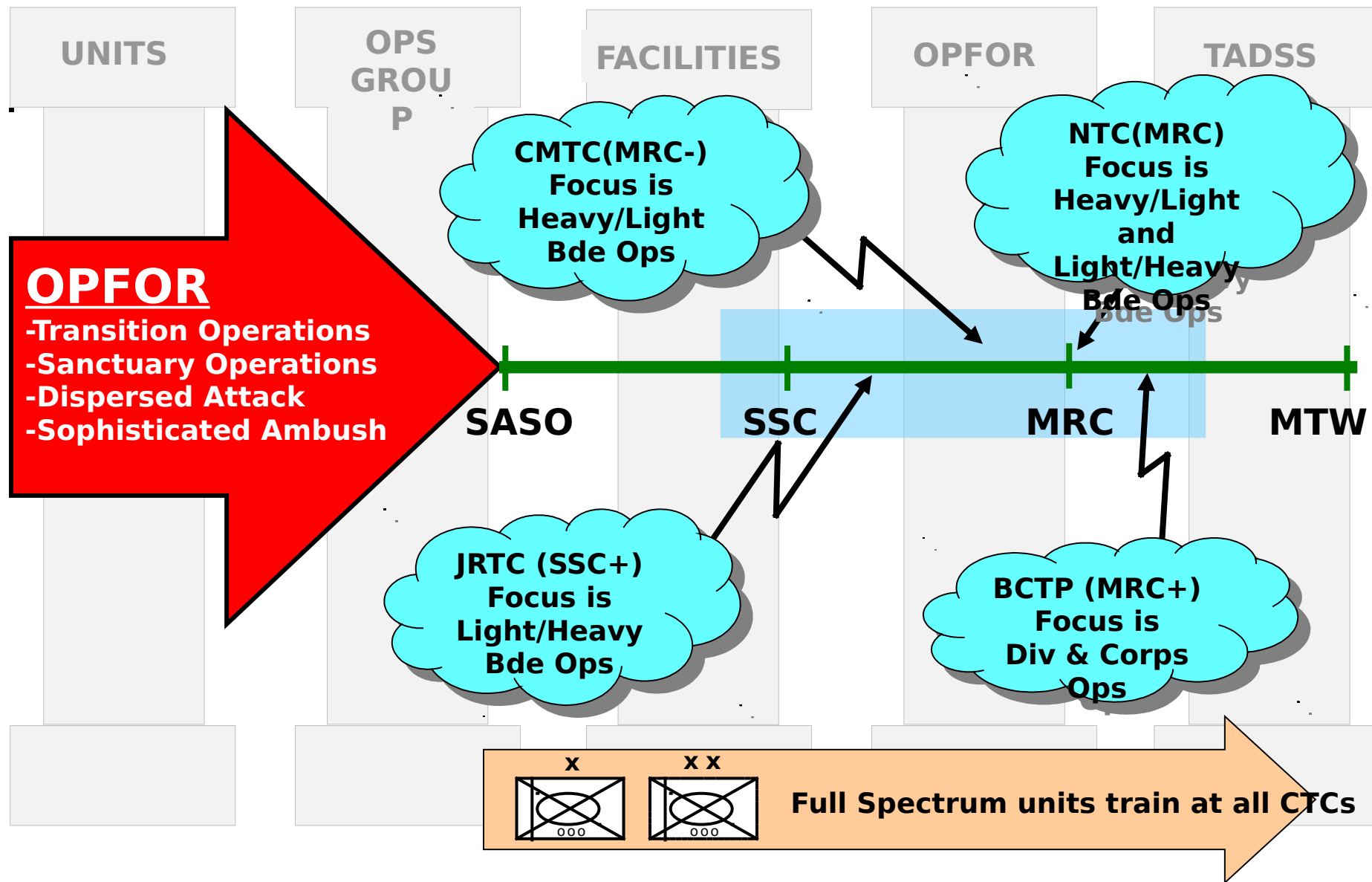
**Complex**  
**Terrain**  
**Terrorists**  
**Urban**  
**Insurgents**  
**Coalition/Allian**  
**ces**  
**C3 Enhance**  
**FLIR**

**Civil**  
**Populace**  
**Media**  
**NGOs/PVOs**  
**Criminals**  
**Special**  
**Police**



# CTC Transformation “Centers of Excellence”

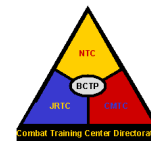
(Specific focus with full spectrum capabilities)







# OPFOR ....Reengineering Strategy



*This is the start point ...staff with MACOMs and DA*

*Begin to implement in 1st QTR FY01*

## Qualities

### Current

- Offensive oriented
  - ✓ Attrition warfare
  - ✓ Mass - momentum-echelonment

### Future

- Defense oriented
  - ✓ Decentralized
  - ✓ Dispersed
  - ✓ Precision
  - ✓ Countermeasure

Red = Recap and Modernize

Green = Divestiture

NC = No Change

Tanks

IFV

Arty

Eng

AT

Reco

Decepti

on Helicopte

rs  
UAVs

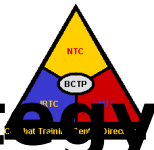
Chem/BIO

## OPFOR Systems

NTC

JRTC



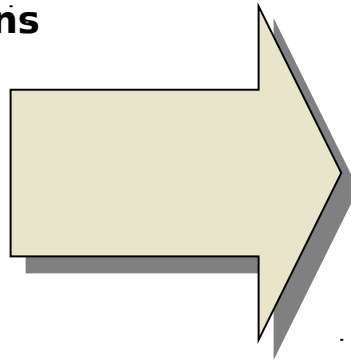


# CTC BLUFOR....Reengineering Strategy

## Qualities

### Current:

- ✓ Defensive oriented
- ✓ Linear Operations
- ✓ Legacy systems
- ✓ Mass operations



### Future:

- ✓ Offense Oriented
- ✓ Full Spectrum Capable
- ✓ Non-contiguous/extended battlespace
- ✓ Technology and force structure enablers

### Units

- Trans \$

### OPS Groups

- OCs

### Facilities

- Land
- MOUT

### TADSS

- Inst
- Sims

NTC JRTC CMTC BCTP



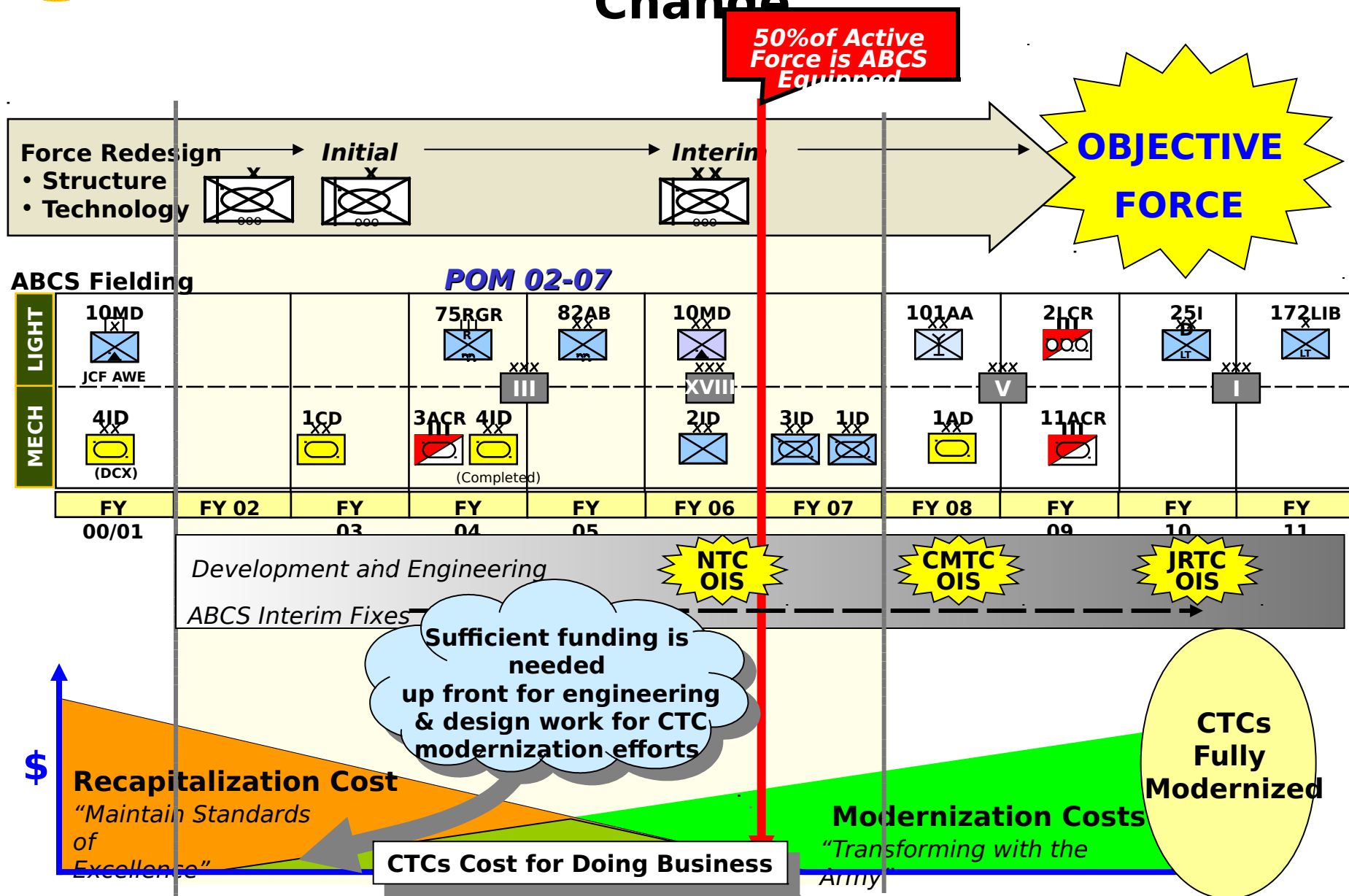
Red= Recap and Modernize

Green= Divestiture

NC= No Change

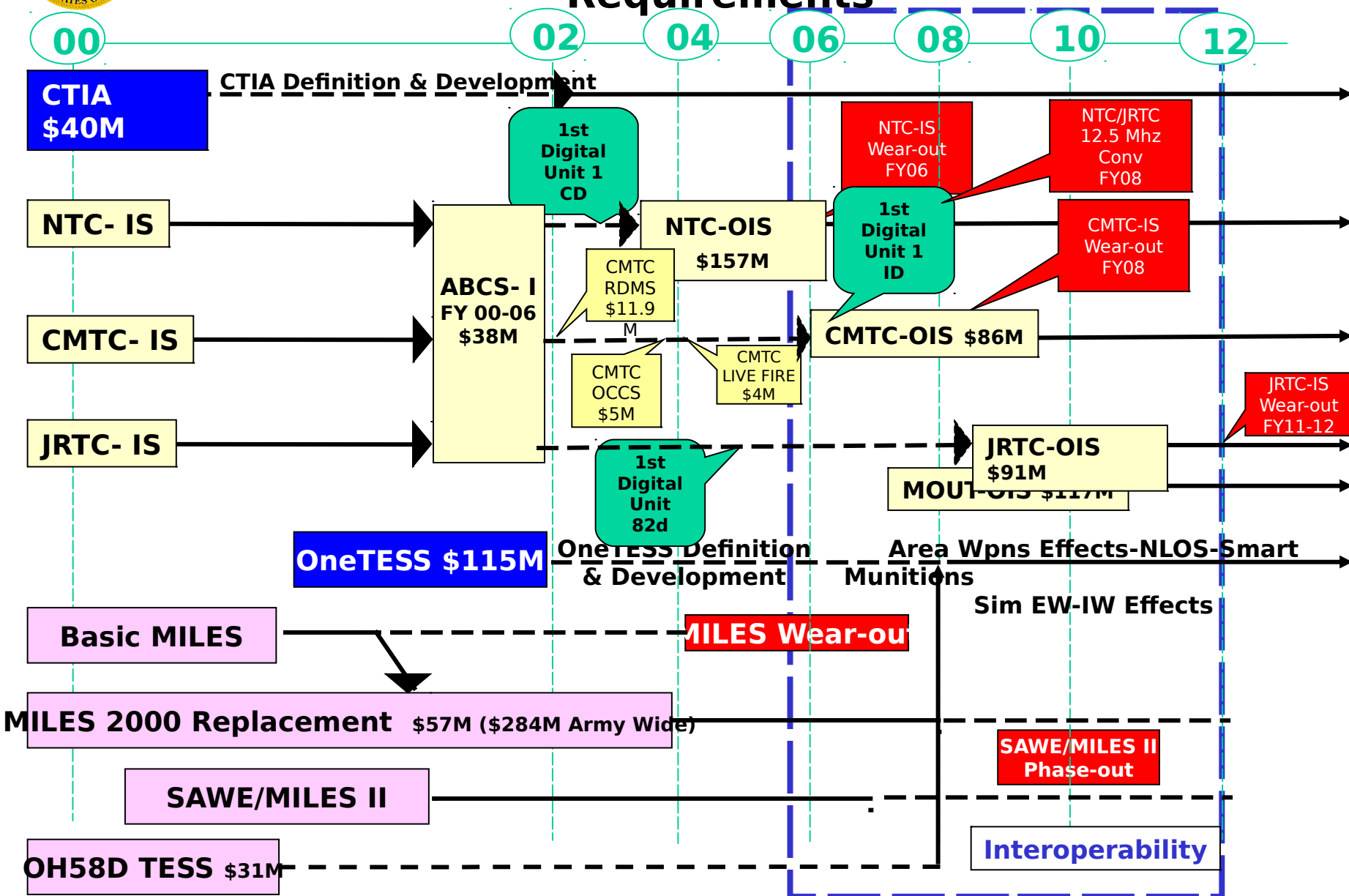
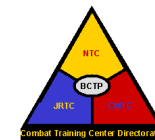


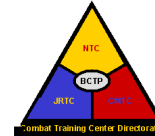
# Technology & Force Structure Vectors of Change





# MCTC Recapitalization and Modernization Requirements





# Recapitalization Requirements FY01

## “25 Meter Targets” (Unfunded

COST in **Red** REQUIREMENT

**CMTC RDMS**

**\$2.9M**

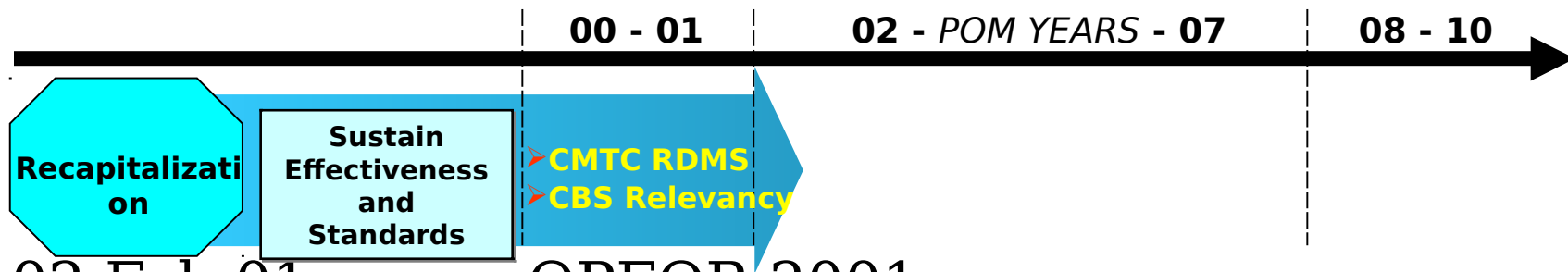
**“Must Fund”  
in FY01**

CMTC Range Data Measurement Subsystem life cycle ends in FY02. CMTC-OIS fielding in FY08 creates a 6 year gap in which instrumented AARs, data collection, and training will cease.

**CBS Relevancy**

**\$1.2M**

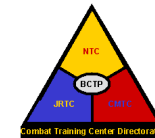
Keeps the Corps Battle Simulation (CBS) model relevant until WARSIM is fully functional. Includes Tactical Simulation (TACSIM) and Combat Service Support Training Simulation System (CSSTSS).





# Recapitalization Requirements FY01

## “25 Meter Targets” (Unfunded in Red)



### COST

### REQUIREMENT

**OH-58D TESS**

**\$34M**

**Per  
LTG Steele  
PM bill**

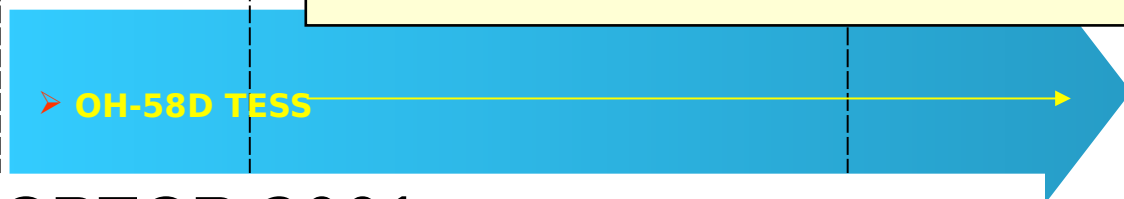
**Tactical Engagement Simulation System for aviators in light DIVs and CAV units that are not receiving instrumented training.**

**Currently, 8 AGES II prototype sets in existence. Total requirement is 66 kits. USAREUR requires 18 kits. 48 kits positioned at Fort Hood to be shared by NTC and JRTC. Kit provides eye-safe laser, Hellfire, .50 cal, and 2.75 inch rocket engagements.**

**OH-58D not phased out until 2013.**

**Important to train crews in a live combined arms environment. Gives a “kill or be killed” capability and provides AAR feedback.**

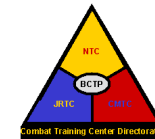
**00 - 01**



02 FEB 01

02 FEB 2001

02



# Recapitalization Requirements FY02-07 (Unfunded in **Red**)

## COST

## REQUIREMENT

**CMTC RDMS**

**\$11.9M**

**PDM**

**CMTC Range Data Measurement Subsystem life cycle ends in FY02. CMTC-OIS fielding in FY08 creates a 6 year gap in which instrumented AARs, data collection, and training will cease.**

**OSTV-Tank (JRTC) \$47M**

**PDM**

**OPFOR Surrogate Tracked Vehicle to replace JRTC's M551s. Wearout is FY04. Difficult to maintain a 70% OR rate. JRTC needs 41 OSTVs to replicate a battalion plus floats and vehicles for rebuild. Interim solution: AMC establishes a "push" system for M551 parts from Anniston to JRTC. Identifies a common vendor to fabricate parts for NTC and JRTC. As NTC replaces M551s with OSVs, rail 15 FM 2-15.1 to JRTC.**

**00 - 01**

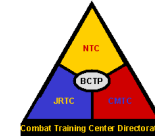
**02 - 07**

**08 - 10**

**Recapitalization**

**Sustain Effectiveness and Standards**

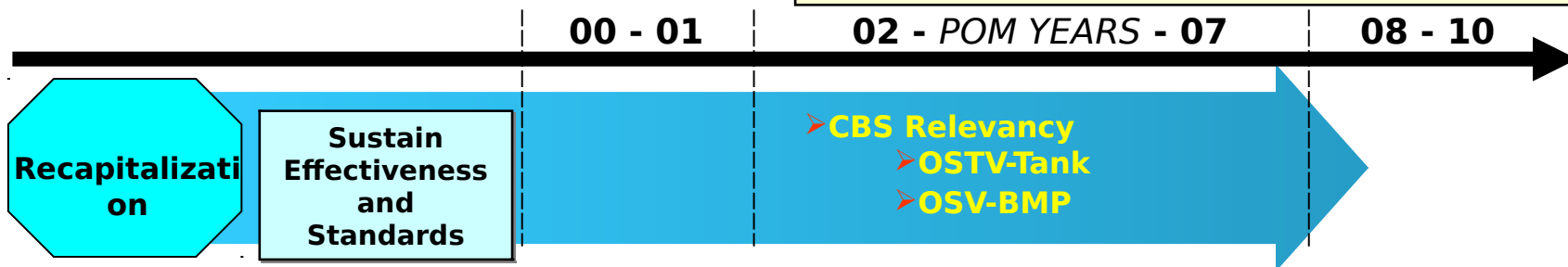
**➤ CMTC RDMS  
➤ OSTV-Tank**



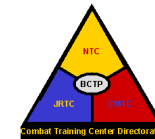
# Recapitalization Requirements (con't)

## FY02-07 (Unfunded in **Red**)

	<u>COST</u>	<u>REQUIREMENT</u>
<b>CBS Relevancy</b>	<b>\$12.4M</b> <b>PDM</b>	Keeps the CBS model relevant until WARSIM is fully functional. Includes Tactical Simulation (TACSIM) and Combat Service Support Training Simulation System (CSSTSS).
<b>OSTV (NTC/CMTC)</b>	<b>\$117M</b> <b>PDM</b>	Replaces aging M60s at CMTC and M551s at NTC due to FY05-06 wearout dates. CMTC requires 41 to replicate a Battalion (plus floats) and NTC requires 63 to replicate a Battalion (+) (plus floats).
<b>OSV-BMP (CMTC)</b>	<b>\$102M</b> <b>PDM</b>	Replaces aging M113s. Better replicates OPFOR IFV (night vision and stabilized gun). CMTC requires 136 OSVs to replicate three mechanized battalions (plus floats).







# Recapitalization Requirements (con't)

**FY02-07 (Unfunded in Red)**

## COST

## REQUIREMENT

**CMTC OCCS**

**\$4.8M**

CMTC Observer Controllers (OCs) currently communicate over SINCGARS radios using 33% of the available tactical spectrum. Commercial OC Communication System (OCCS) radios, like those used at NTC, will free up 171 freqs for rotational units.

**CMTC SINCGARS**

**\$13M**

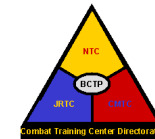
CMTC SINCGARS tactical radio system infrastructure was not provided with SINCGARS fielding. Upgrade will provide transmission towers, multi-plexers, and power racks to increase available number of tactical frequencies that can be monitored and recorded, while increasing FM coverage to reduce dead spots in the maneuver box.

00 - 01



Sustain  
Effectiveness  
and  
Standards

➤ CMTC OCCS  
➤ CMTC SINCGARS



# Recapitalization Requirements (con't)

## FY02-07 (Unfunded in Red)

### COST

### REQUIREMENT

**CMTC Live Fire (Interim) \$4M**

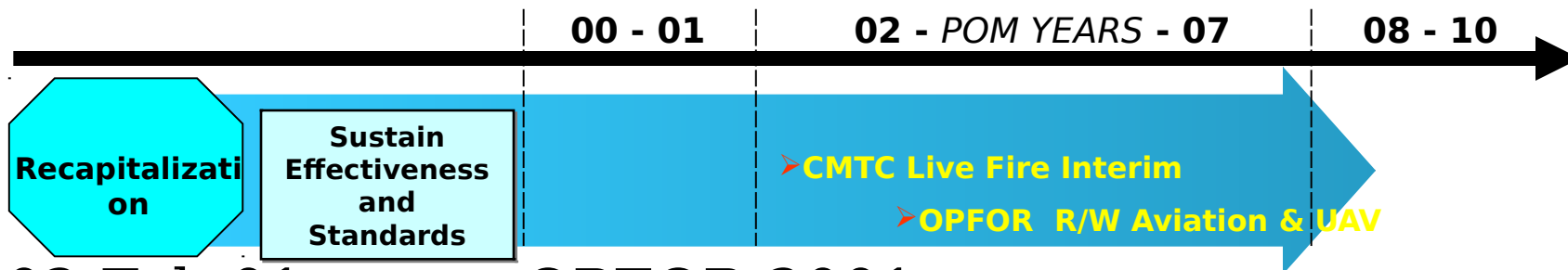
Provides USAREUR a limited instrumented live fire capability at Grafenwoehr for a battalion task force.

**OPFOR R/W Aviation & UAV**

**\$37.6M**

**Study in FY01**

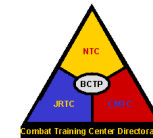
UH-1Hs are aging and near wearout. UH-1Hs leave the inventory in FY04. Aircraft do not adequately portray current and future threats. No dedicated UAVs for OPFOR. Estimated Avn costs are **\$20.8M**. UAV system costs are **\$16.8M** for all three CTCs. Requires an independent study.





# Recapitalization Requirements (con't)

## FY02-07 (Unfunded in Red)



### COST

### REQUIREMENT

CMTC MOUT-IS Video **\$1.76M**

CMTC's MOUT sites are not instrumented. This gives CMTC a limited video capability to enhance training feedback for AARs until an obj Instrumentation System (IS) is fielded in FY08.

NTC MOUT Facility **\$29M**

**MCA  
MILCON**

Funds NTC combined arms MOUT complex for force-on-force training. Instrumentation costs included in MOUT-OIS funding (**\$9M**).

Land Expansion **\$114M**

Purchase buys 131,000 acres for NTC (**\$108M**) . Cost is **\$90M** for environmental mitigation and land purchase, & **\$18M** for roads, underpasses, etc. Does not include **\$62M** for instrumentation. Buys 4,800 acres for JRTC. Cost is **\$6M** for environmental mitigation.

00 - 01

02 - POM YEARS - 07

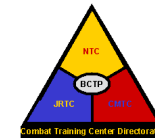
08 - 10



➤ CMTC MOUT Video

➤ NTC MOUT Facility

➤ Land Expansion



# Modernization Requirements

FY02-07 (Unfunded in **Red**)

## COST

## REQUIREMENT

**CTIA**

**\$40**

**PDM**

Reduces RDA costs through Common Training Instrumentation Architecture (CTIA) for all CTCs and homestation. Enables digital data exchange and connectivity for CTCs and homestation.

**NTC OIS**

**\$157**

**PDM**

Objective Instrumentation System (OIS) replaces aging components. Common Training Instrumentation Architecture (CTIA) based/OneTESS compliant. Provides digital functionality and is basis for CMTC, JRTC replacement and homestation and MOUT instrumentation. Scheduled to field in FY06.

**ABCS Integration**

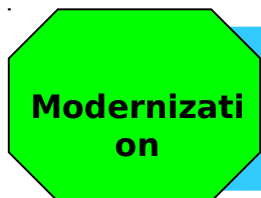
**\$25  
M**

**PEO Bill**

Army Battle Command System - Integration enables Instrumentation Systems to collect digital data to prepare AARs. Does not give OCs ability to monitor digital data from their HMMWVs. Interim solution until Objective IS system is fielded at CTCs.

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➤ CTIA

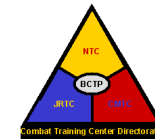
➤ NTC OIS

➤ ABCS-I

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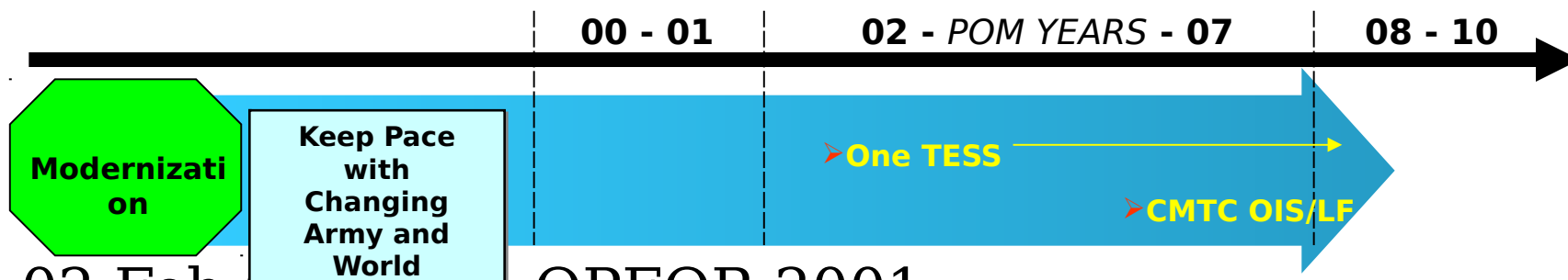
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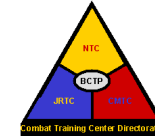


# Modernization Requirements (con't)

## FY02-07 (Unfunded in Red)

	<u>COST</u>	<u>REQUIREMENT</u>
OneTESS	<b>\$115M</b>	The ONE Tactical Engagement Simulation System (TESS) replaces MILES, TWGSS/PGS, and AGES providing advanced weapons systems effects (e.g., NLOS and smart munitions).
CMTC OIS/Live Fire	<b>\$86M</b>	Objective Instrumentation System that replaces aging components. CTIA based and OneTESS compliant. Provides digital functionality and an instrumented live fire capability at Grafenwoehr. Scheduled to field in FY08.





# Modernization Requirements (con't)

## FY02-07 (Unfunded in Red)

### COST

### REQUIREMENT

**BCTP Digital Rotations**

**\$7.5 M**

Additional funding required for contractor and military support over and above WFX funding support. Does not include DCX/CAWE AECP funding requirements.

**DEPLOYEX**

**\$8.8M**

BCTP's cost to integrate the DEPLOYEX into the existing WFX model (IAW FORSCOM scheduled Corps and Division WFXs). Cost includes an additional homestation seminar, additional WFX contractor support for FY02-07, and increased

**PREPO Fleet**

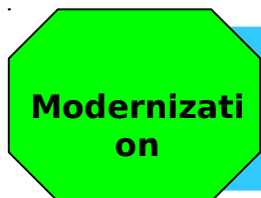
**\$28.3M**

Additional funding required for FY03-07 for units participating with organic M1/M2 equipment. Pays for rail cars and MILES belts installation at home station.

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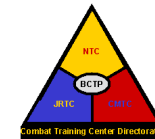
02 - POM YEARS - 07

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➤ BCTP Digital Rotations  
➤ DEPLOYEX  
➤ PREPO Fleet



# Modernization Requirements (con't)

## FY02-07 (Unfunded in Red)

### COST

### REQUIREMENT

**OPFOR Cbt Wheels** **\$38.4M**

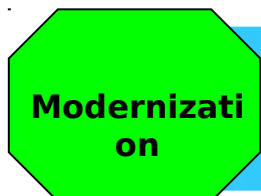
**Study in  
FY01**

Provides a wheeled combat vehicle threat on the CTC battlefield for NTC, JRTC, and CMTC that supports the operational environment and Army Transformation. Includes recon, AT, NLOS AT, and towed AT vehicles. NTC and CMTC require 84 each. JRTC requires 49. Total of 217. Requires an independent study.

**Operational  
Environment** **\$166.9M**

POM "wedge" to account for anticipated changes in the operational environment. Includes: civilians on the battlefield (COBs); media; PSYOPS; IW; doctrine; deception; Ph/Pk TESS upgrades; GPS electronic attack; and increased combat engineer, ADA, AT, and infantry support.

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➤ **OPFOR Combat Wheels**

➤ **Operational Environment**

02 FY01

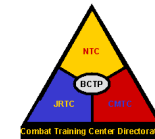
OPFOR 2001

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# Modernization Requirements

## FY08-12 (Unfunded in Red)



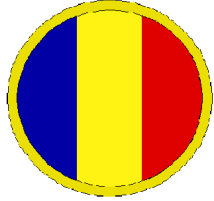
	<u>COST</u>	<u>REQUIREMENT</u>
JRTC OIS	<b>\$91M</b>	Objective instrumentation system that replaces aging components. CTIA based/OneTESS compliant. Provides digital functionality. Scheduled to field in FY11.
MOUT OIS	<b>\$117M</b>	Instrumentation to replace existing legacy systems at JRTC and begin NTC and CMTC. Also supports homestation sites and digital units. Scheduled to field in FY08 at NTC, FY10 at CMTC, and FY12 at JRTC.







# OE Requirements for Mini-POM MDEP Reviews (**Unfunded**)



DCSINT Priority	Issue	Center	FY 03-07 Cost *
1	Camouflage, Concealment & Deception (CC&D) Plt	NTC, J RTC, CMTC	0.706
2	Counter Measures	NTC, J RTC, CMTC	6.132
3	CTC Tactical Engagement Sys (TES)	All CTCs	3.300
4	OPFOR DTLOMS Study	NTC, J RTC, CMTC	1.000
5	OPFOR Surrogate Wheeled Veh (OSWV)	NTC, J RTC, CMTC	52.580
6.1	Infantry Co	J RTC & CMTC	11.840
6.2	Engineer Co	NTC & J RTC	27.290
6.3	Engineer Bn	CMTC	40.970
7	COB	NTC & J RTC	7.350
8	Information Warfare Teams	All CTCs	4.000
9	OPFOR C3 (Cmd Ctrl & Commo) Systems	NTC & CMTC	2.613
10	Media Teams	All CTCs	1.440
11	OPFOR UAV Systems	NTC, J RTC, CMTC	16.800
12	OPFOR GPS Electronic Attack	NTC, J RTC, CMTC	4.350
13	OPFOR Information Warfare	NTC, J RTC, CMTC	4.350
14	OPFOR Infantry Weapons	NTC, J RTC, CMTC	20.960
15	OPFOR Avn Rotary Wing (RW)	NTC, J RTC, CMTC	20.820
16	OPFOR Man Portable Air Defense (MANPAD)	NTC, J RTC, CMTC	14.640
17	Handheld Forward Looking Infrared Radar (FLIR)	J RTC	0.100
18	OPFOR Directed Energy Weapons (DEW)	NTC, J RTC, CMTC	1.650
<b>TOTAL</b>			<b>242.891</b>

\* OMA \$139.565 / OPA, RDTE \$103.326